

molecular services 2022



**nzytech**  
molecular services





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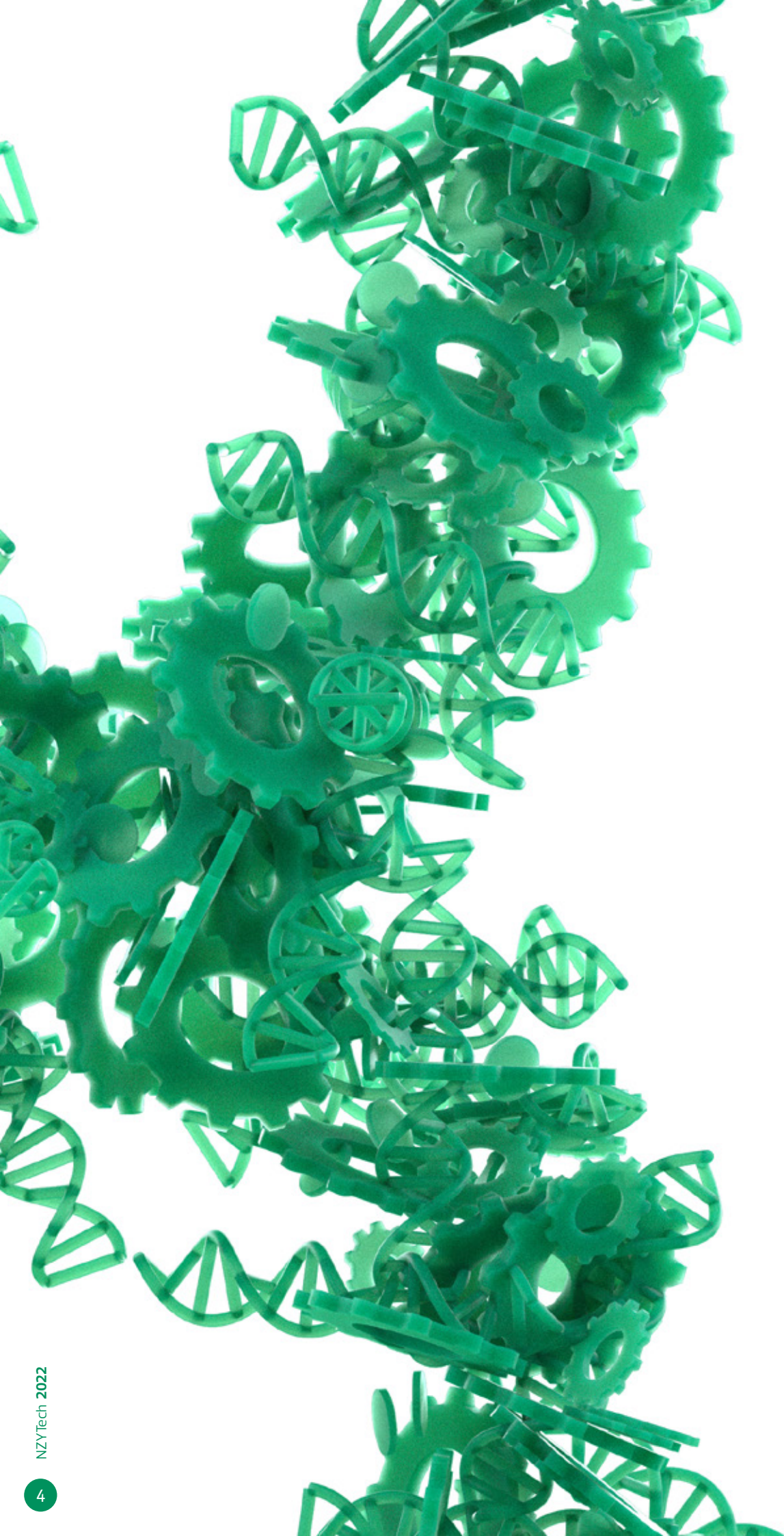
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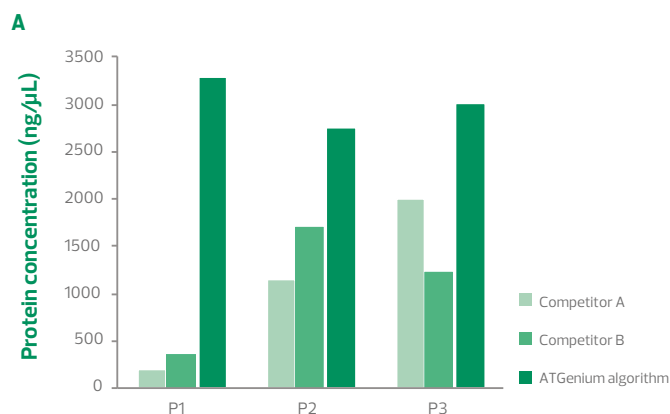
@ a glance

# GENE SYNTHESIS

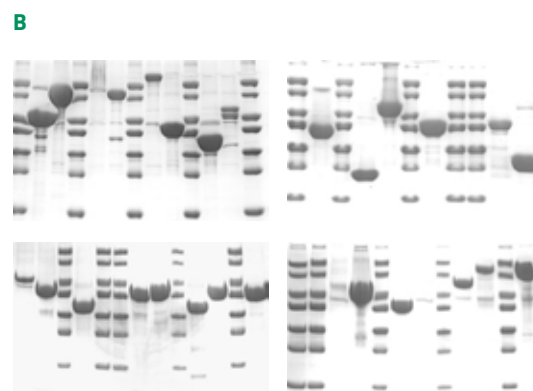
Gene synthesis has become an important tool in many fields of recombinant DNA technology. Whether you have limited cloning experience or simply want to save time, NZYTech's Gene Synthesis service helps you to quickly move your ideas from the planning stage to the laboratory. A highly motivated team is eager to provide you with a very efficient service affording considerable savings of time and money. Either if you select the custom or High-Throughput (HTP) Gene Synthesis service you will be offered a premium service that will deliver high quality and downstream efficacy.



NZYTech's scientists have also developed a highly robust gene design optimization software - **ATGenium** codon optimization algorithm - to maximize protein expression. Our proprietary algorithm comprehensively optimizes critical factors in transcription, translation and co-translational protein folding to deliver highest levels of expression in any host system. This service is offered at no extra cost for all gene synthesis services if required.



**A.** Levels of protein expression of three different eukaryotic proteins in *Escherichia coli* BL21 (DE3). The genes encoding these proteins were optimized by three algorithms for codons optimization, by two different competitors (light green) and using the ATGenium codon optimization algorithm developed by NZYTech (dark green).



**B.** High-throughput recombinant protein expression of CAZymes (Carbohydrate Active enzymes). Genes encoding these proteins were optimized using ATGenium, cloned into pHTP1 expression vector and overexpressed in *E. coli* BL21 (DE3). High protein expression yields were obtained.



## CUSTOM GENE SYNTHESIS

NZYTech's Custom Gene Synthesis service provides in vitro chemical synthesis, cloning and 100% sequence verification of any desired DNA sequence.

Genes are cloned into our standard cloning vectors. Downstream services, including sub-cloning, site-directed mutagenesis, plasmid preparation and protein expression are available upon request.

### Gene Synthesis

Gene Synthesis (DNA fragments <500 bp)	GS00301	129,00 €/gene
Gene Synthesis (DNA fragments 501-1000 bp)	GS00302	0,24 €/bp
Gene Synthesis (DNA fragments 1001-2000 bp)	GS00305	0,25 €/bp
Gene Synthesis (DNA fragments 2001-5000 bp)	GS00306	0,28 €/bp
Gene Synthesis (DNA fragments > than 5001 bp)	GS00304	inquire

Flexible, custom gene design  
Free codon optimization – ATGenium  
Sequences 100% verified

### Gene sub-cloning

Gene sub-cloning	MS00204	starts at 99,00 €/gene
Gene sub-cloning into pHTP vectors	MS00205	59,00 €/gene

## HIGH-THROUGHPUT GENE SYNTHESIS

NZYTech's R&D team has developed a High-Throughput (HTP) Gene Synthesis platform to efficiently generate hundreds to thousands of synthetic genes. We offer a high quality HTP Gene Synthesis service for DNA fragments below 4 kb. HTP Gene Synthesis will allow to tackle difficult research projects such as: determination of structure-function relationships in different proteins, creation of novel antibody libraries, screening of gene variant libraries or optimization of protein function and expression. Our codon optimization technology - ATGenium algorithm - allows obtaining the highest possible levels of gene expression in different expressions hosts while retaining high levels of protein solubility.

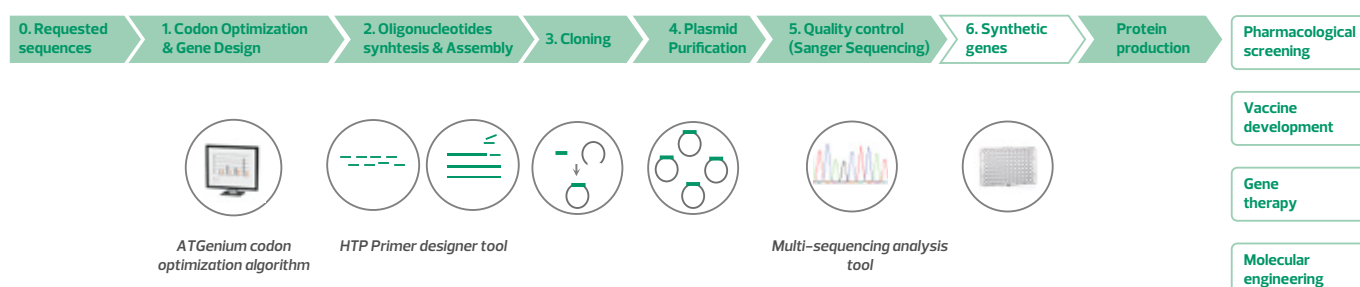
### HTP Gene Synthesis (> 48 genes)

HTP Gene Synthesis (> 48 genes) (DNA fragments <500 bp)	HS00501	109,00 €/gene
HTP Gene Synthesis (> 48 genes) (DNA fragments 501-1000 bp)	HS00502	0,18 €/bp
HTP Gene Synthesis (> 48 genes) (DNA fragments 1001-5000 bp)	HS00503	0,19 €/bp
HTP Gene Synthesis (> 48 genes) (DNA fragments > than 5001 bp)	HS00504	inquire

### HTP Gene Sub-cloning (> 48 genes)

HTP Gene Cloning (> 48 genes) (into pHTP vectors)	HS00201	50,00 €/gene
HTP Gene Cloning (> 48 genes) (into other vectors)	HS00202	90,00 €/gene

– Flexible gene design process  
– Free codon optimization  
– 100% sequence accuracy guaranteed  
– Sub-cloning into any *E. coli* expression vector from our pHTP library or other



# GENE CLONING

## CUSTOM GENE CLONING

NZyTech will customize your plasmid DNA according with your requests. By using next generation cloning techniques, we will quickly join any insert to a plasmid at any location. NZyTech has a comprehensive library of several *E. coli* expression plasmids - pHTP expression vectors - containing different tags known to enhance protein's solubility and/or promote correct protein's folding. This may constitute the best economic and flexible alternative for selecting an appropriate tag for each type of protein. We offer a high performance DNA cloning service allowing you to save time and energy for your research.

### Gene cloning & Sub-cloning

MS00201	into any vector	starts at 199,00 €/gene
MS00202	into pHTP vectors	99,00 €/ gene

Vector		Fusion protein	Fusion tag	Tag size (kDa)
pHTP1	Hexa-histidine		His <sub>6</sub>	2.11
pHTP2	Leader less disulfide-bond isomerase DsbC		LLDsbC-His <sub>6</sub>	25.98
pHTP3	Mutant version of disulfide-bond isomerase DsbC		mutDsbC-His <sub>6</sub>	25.91
pHTP4	Disulfide-bond isomerase DsbC*		DsbC-His <sub>6</sub>	28.01
pHTP7	Disulfide oxidoreductase DsbA*		DsbA-His <sub>6</sub>	25.43
pHTP8	Thioredoxin		Trx-His <sub>6</sub>	14.52
pHTP9	Green fluorescent protein		GFP-His <sub>6</sub>	29.33
pHTP10	N-utilization substance A		NusA-His <sub>6</sub>	57.17
pHTP11	Glutathione S-transferase		GST-His <sub>6</sub>	28.07
pHTP13	Gbl Domain of Protein G		Gbl-His <sub>6</sub>	8.54
pHTP14	Ketosteroid isomerase		KSI-His <sub>6</sub>	15.70
pHTP16	<i>R. flavefaciens</i> cellulosomal protein		CpA-His <sub>6</sub>	31.94
pHTP17	<i>R. flavefaciens</i> cellulosomal protein		CpB-His <sub>6</sub>	30.24

\* fusion tag includes a signal peptide sequence.

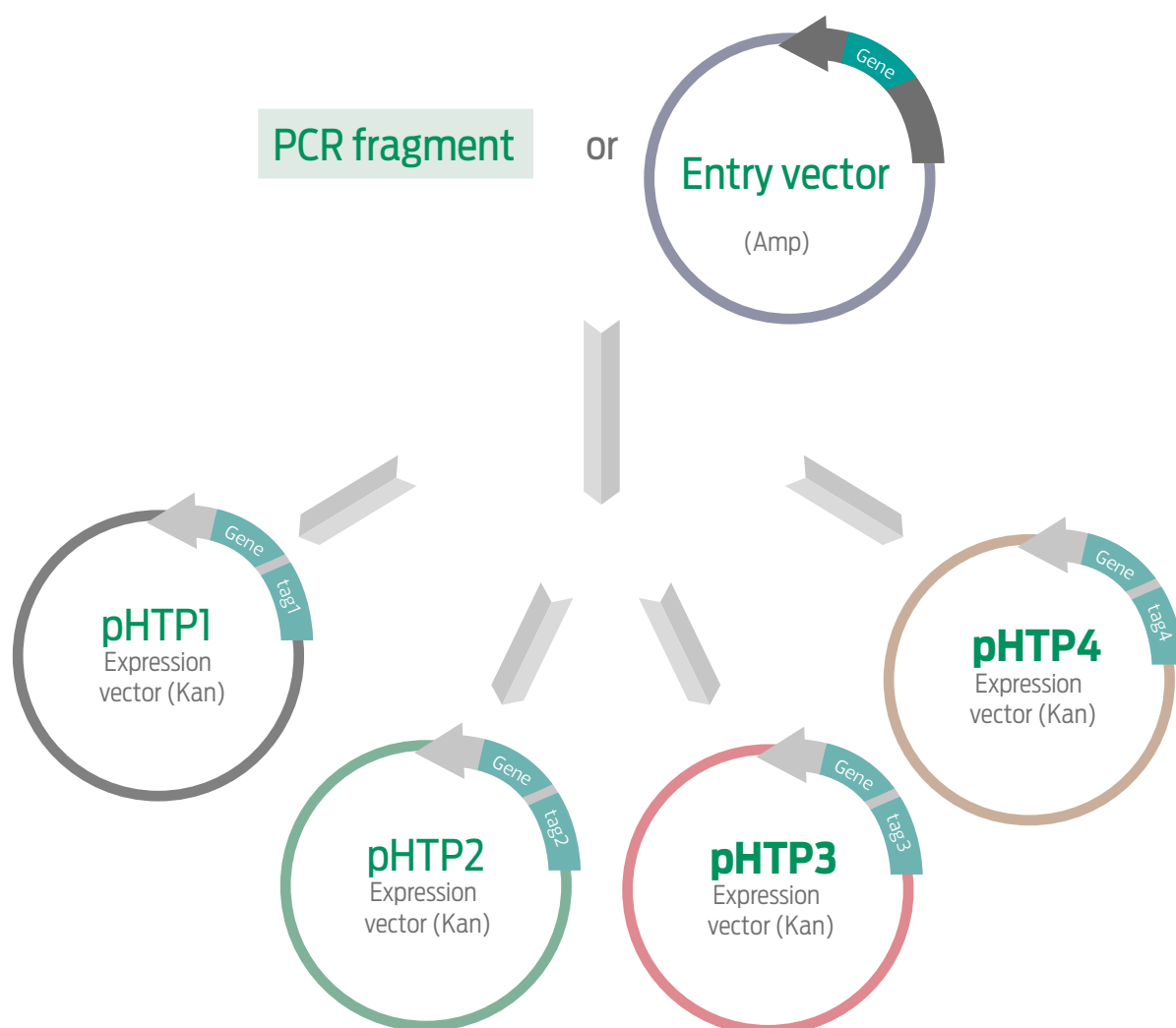


## HIGH-THROUGHPUT GENE CLONING

NZYTEch offers a high-throughput cloning service for large projects typically involving several hundreds to thousands of genes. A proprietary method is used for cloning your genes into one or more selected pHTP vectors. Moreover, we can also clone your genes into your vector. Our method does not require the use of conventional restriction enzymes and DNA ligases, which increases speed while improving cloning efficiencies. Only the desired DNA fragments are cloned into the destination vector(s) in the correct orientation.

### HTP Gene Sub-cloning (> 48 genes)

HTP Gene Cloning (> 48 genes) (into pHTP vectors)	HS00201	50,00 €/gene
HTP Gene Cloning (> 48 genes) (into other vectors)	HS00202	90,00 €/gene

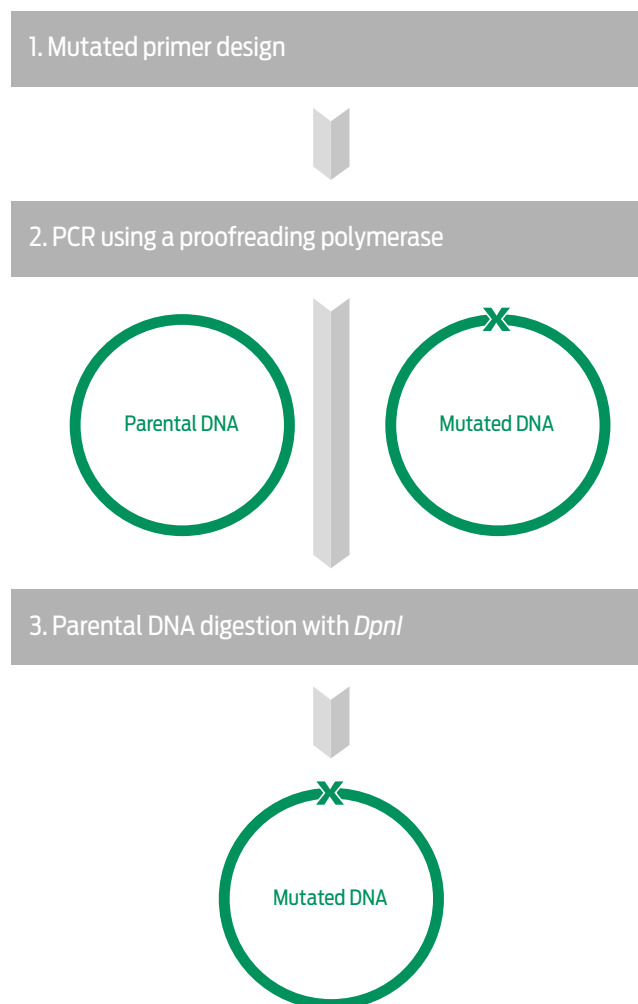


# SITE-DIRECTED MUTAGENESIS

NZYTEch offers a site-directed mutagenesis service which includes substitution, deletion or insertion of any base pair into a DNA sequence. The strategy usually involves an oligonucleotide-directed mutagenic approach using the provided DNA template.

## Site-directed mutagenesis

MS00302	Site-directed mutagenesis - Standard - 1 mutant	starts at 299,00 €/gene
MS00303	Site-directed mutagenesis - Standard - 3 mutants	starts at 269,00 €/gene
MS00304	Site-directed mutagenesis - Standard - 5 mutants	starts at 229,00 €/gene
MS00305	Site-directed mutagenesis - Complex and/or Multiple	inquire



Template plasmid DNA supplied by the customer  
Introduce single or multiple mutations  
Fast turnaround time



# PLASMID DNA PREPARATION

NZYTEch's plasmid DNA preparation services are amenable to small research labs and to large-scale biotech or pharmaceutical companies. Our high-quality plasmids obtained from *Escherichia coli* cultures will help you to achieve highly efficient cell transfection, as well as microarray analysis, viral packaging, mammalian cell expression, support DNA vaccine development, antibody production, among others.

## Plasmid DNA Preparation Miniprep (2-10 µg), <24 preps

MS00101 30,00 €/prep

## Plasmid DNA Preparation Miniprep (2-10 µg), 24-48 preps

MS00102 20,00 €/prep

## Plasmid DNA Preparation Miniprep (2-10 µg), >48 preps


MS00103 10,00 €/prep

## Plasmid DNA Preparation Midiprep (25-75 µg)

MS00104 60,00 €/prep

## Plasmid DNA Preparation Maxiprep (100-500 µg)

MS00105 120,00 €/prep



Host strain: *E. coli*  
Large scale plasmid DNA  
Fast, cost-effective service  
Endotoxin-free upon request  
High and low-copy number plasmids



# RECOMBINANT PROTEIN PRODUCTION

## STANDARD PROTEIN PRODUCTION

Our dedicated team of scientists has worked to offer you a high-quality and cost-effective recombinant protein expression service. Protein production can be scaled up from one to several liter volumes of *Escherichia coli* culture. High-quality recombinant proteins are purified through Immobilized Metal Affinity Chromatography (IMAC).

### Recombinant Protein Production in *Escherichia coli*

MS00401

starts at 500,00 €/protein

Expression system: *E. coli*

High-quality recombinant proteins purified through IMAC

Proteins are provided from µg to mg scale

Complementary services – gene synthesis & cloning upon request



## ENHANCED PROTEIN PRODUCTION

NZYTech has designed different strategies to enhance the production of difficult-to-express proteins. With that in mind, we developed a battery of *E. coli* expression vectors – pHTP series – which allow testing expression of any protein in fusion with several tags known to enhance solubility and/or promote correct folding. To overcome solubility problems of challenging proteins, we offer a service that includes a small-scale expression screening stage (stage 1), followed by a second stage for large-scale protein production (stage 2).

### Enhanced Protein Production - Stage 1

MS00402

2.500,00 €/protein

### Enhanced Protein Production - Stage 2

MS00403

starts at 200,00 €/protein

#### Stage 1

PCR & cloning into 10 different pHTP expression vectors containing different tags

Small-scale protein production trials: growth media and/or induction temperatures, in order to evaluate optimal expression conditions

Protein purification through IMAC

SDS-PAGE analysis & protein quantification

Protein expression report

#### Stage 2

Scale-up protein production

## HIGH-THROUGHPUT PROTEIN PRODUCTION

NZYTech offers an innovative high-throughput service for large-scale recombinant protein expression and purification. Protein purification is ideally performed through IMAC in an automated platform after expression in *Escherichia coli*.

### HTP Protein Production (> 48 proteins)

HS00301

100,00 €/protein

# PEPTIDES

## PEPTIDE SYNTHESIS

NZYTEch offers a high-quality peptide synthesis service designed to ensure our customer's complete satisfaction. Every peptide is subjected to a variety of performance control steps to guarantee the highest quality. Peptides may be provided crude, desalted, or with 75% to 98% purity. In addition, NZYTEch peptides can be subjected to a variety of chemical modifications upon request.

	PS00107	PS00108	PS00109	PS00110	PS00111	PS00112
Amount	Crude (€/AA)	Desalted (€/AA)	>75% (€/AA)	>85% (€/AA)	>95% (€/AA)	>98% (€/AA)
1 - 3 mg	3,46	4,34	6,94	8,68	12,14	15,61
4 - 7 mg	3,90	4,78	7,71	10,58	13,35	18,99
8 - 10 mg	4,34	5,38	9,10	11,96	15,44	21,76
11 - 15 mg	4,60	5,64	10,24	13,35	17,60	24,98
16 - 20 mg	4,78	5,90	11,28	14,74	19,68	28,09
21 - 25 mg	5,13	6,24	12,30	15,88	21,41	29,91
26 - 30 mg	5,38	6,68	13,35	16,83	23,06	31,64
31 - 40 mg	5,90	6,94	14,48	18,64	24,55	34,08
50 mg	6,24	7,46	15,44	20,38	26,01	36,50
100 mg	7,71	8,84	20,38	26,01	35,11	49,15
1000 mg	21,08	24,45	60,86	72,91	97,28	145,74
Minimal Fee (€)	150,00					

Lyophilized peptide delivered with the required sequence, purity and quantity

Several modifications available: phosphorylation, methylation, acetylation, amidation, fluorescence/dye labeling

Additional discounts for large-scale peptide synthesis orders



# TERMS & CONDITIONS

By placing an order, CUSTOMERS accept all terms and conditions of this agreement.

CUSTOMERS that do not agree to the full terms and conditions of this agreement should not place an order. Once a customer accepts these terms and conditions the CUSTOMER cannot subsequently decline or modify any term or condition without the prior written consent of NZYTech.

## Use of Products

NZYTech products, services, kits and reagents are for laboratory research and *in vitro* use only. CUSTOMERS must read all relevant information about the product before starting the work. Please visit our website to find out more details about the Products, Product Brochures and Material Safety Data Sheets (MSDS) available for download. NZYTech Products should NOT be used as Agricultural or Pesticide Products, Cosmetics, Drugs, Food Additives or Household Chemicals. NZYTech products may not be reformulated, repacked or resold by CUSTOMER in any form without consent.

## Warranty

NZYTech warrants that its products comply with the specifications indicated in the accompanying technical brochure as long as the product itself has a valid Certificate of Analysis (CoA). If a product fails to comply with its specifications, NZYTech should be informed as it may choose to replace it free of charge or refund the purchase price. This warranty applies only to products that have been handled and stored in accordance with NZYT recommendations/specifications.

## Complaints

Complaints regarding product quality will only be accepted as long as the relevant product has a valid certificate of analysis (CoA). NZYTech will require the CUSTOMER to provide all the necessary information in order to process the complaint accordingly, i.e., include invoice number or Purchase Order number, batch number, problem description and evidence to sustain the complaint.

## Pricing

Prices are shown in Euro (€). Prices may be subjected to change without prior notice. NZYTech, at its own discretion, may require pre-payment of any order. Specific written quotations are valid for 90 days, excluding promotions, for which quotations are valid for 30 days.

## Orders

If applicable, when placing your order please refer the quote or pro-forma invoice number. NZYTech may not initiate the invoicing process without a Purchase Order. NZYTech will not accept orders by phone. Orders are only accepted via website (online store), e-mail or fax. If you order via our website (online store), we will guarantee the price shown at the website at that time. Prices shown in catalogue and NZYTech website exclude VAT, which might be applied when the invoice is issued. At NZYTech sole discretion, shipment will be made promptly if orders have been fully paid.

## Payment Terms

For international sales, advanced payment may be required, and, in such cases, orders are only processed upon our bank's confirmation of money transfer. Banking expenses shall be fully supported by the CUSTOMER. In specific cases, the production will take place prior to bank validation of money transfer.

For Portugal and Spain, invoices will be due within 30 days from issue date. Advanced payment may be required.

Once an order is accepted by NZYTech, it can only be cancelled in cases where production on demand did not take place. In the specific cases of Services, including Gene Synthesis, Cloning, Mutagenesis, Protein Expression, Peptide Synthesis, DNA sequencing



and Oligonucleotides, services that are only produced on demand, NZYTech will not accept the cancelation of any such orders and the CUSTOMER will be responsible for payment of the total amount of the invoice in case of cancellation.

### Shipping Costs

Spain (Main Land): 9 €

Portugal (Main Land): 5 €

Austria, Belgium, Denmark, France, Germany, Ireland, Italy, Luxembourg, Poland, Sweden, The Netherlands, United Kingdom: 25€

Bulgaria, Croatia, Czech Republic, Estonia, Finland, Greece, Hungary, Latvia, Lithuania, Romania, Slovakia, Slovenia: 50€

Albania, Andorra, Belarus, Bosnia Herzegovina, Cyprus, Gibraltar, Iceland, Kosovo, Lichtenstein, Macedonia, Malta, Moldavia, Monaco, Montenegro, Norway, San Marino, Serbia, Switzerland, Ukraine, Vatican: 125€

All other geographic areas: Upon quotation (in these cases shipping costs are additional to the price of the products and fully supported by the client).

Products that require ultra-low temperature shipping will have an extra cost for dry ice (29 € / shipment).

Custom fees, if any, related to the clearance of goods upon product arrival to the destiny country are of CUSTOMER responsibility.

### Eurofins Genomics

Eurofins Genomics Products and Services will be shipped directly by Eurofins.

Shipping Costs for Portugal and Spain: 8,5€ for orders below 200€ (Without VAT).

Eurofins and NZYTech Orders cannot be combined to save shipping.

### Product Shipping and Delivery

All products are transported in the appropriated conditions to maintain intact all the properties inherent to their expected output. NZYTech can ship at different temperatures products to be stored according to product label temperature indications in the cases where this does not affect product quality. Regarding Incoterms, NZYTech can deliver goods with the following Delivery Terms: DAP – delivered At Place of Destination, where we handle the shipment from our facilities to Customer's address (all shipping and customs fees on NZYTech's responsibility); DPU – Delivery at Place Unloaded, formerly referred as DAT – Delivery at Terminal, or EXW – Ex-Works, when using a Customer's courier account (all shipping and customs fees on Customer's responsibility). In specific cases, like CAZymes, Analytical Products, Molecular Diagnostics kits, Molecular Services, custom and bulk orders can take longer to produce and ship the goods. All Services, including gene synthesis, DNA sequencing and oligonucleotides, are only produced on demand and, therefore, each order has its own deadline. For most countries, the delivery occurs within five working days, except in case of stock rupture.

In case a customer requires any certification to be sent with the goods, i.e., Certificate of Origin or ATR forms, these requirements must be stated upon placement of the order, as these documents will be provided at an additional cost.

### Return Policy

NZYTech CUSTOMER Service is available to assist you in every way possible if a problem arises with your order. The CUSTOMER must inspect all packages immediately upon receipt and store the goods at the designated storage temperature.

CUSTOMER will only have 14 calendar days to notify NZYTech if any damage or discrepancy occurs. After this period, NZYTech will assume that the products were properly delivered and no longer accepts any complaint regarding packaging, delivery or other. In case of any damage occur, please retain the damaged goods, packing material and shipping documents and please notify our Customer Service through e-mail at [info@nzytech.com](mailto:info@nzytech.com). If the damage requires you to return the goods to NZYTech, our Customer Service will provide assistance, shipping instructions and authorizations. If an item is shipped to you incorrectly, as the result of a mistake from our Logistics team, please contact our Customer Service through e-mail at [info@nzytech.com](mailto:info@nzytech.com), and we will take a quick and appropriate action to correct the problem. At NZYTech sole discretion, returns may be accepted for items stored at room temperature and that have been ordered by mistake but will be subjected to a processing fee of 30% to cover costs.

For e-commerce online orders carried out by consumers, if applicable, the return period without any cause is 14 calendar days from date of receipt of goods.

## Discontinuation of Products

We reserve the right to discontinue any product without prior notice, unless NZYTech has provided a long-term confirmation of delivery.

## Gene Synthesis and Custom Cloning: Representations and Indemnities

NZYTech can clone synthetic genes into custom vectors. CUSTOMER will provide the custom vectors necessary for NZYTech to provide the requested services. Such custom vectors shall remain the property of CUSTOMER throughout the cloning and sequencing process. CUSTOMER hereby grants NZYTech a limited, non-exclusive, royalty-free license to use the custom vectors and the gene sequences for the purpose of performing the services. By agreeing to the terms and conditions of this Agreement and providing NZYTech with the custom vectors and the gene sequence, CUSTOMER, at its own risk and liability, represents and warrants that it has the power and authority to grant the foregoing license, or otherwise has obtained all licenses and rights, including all intellectual property rights, necessary for NZYTech to provide the requested services.

For custom cloning projects, no turnaround guarantee is offered. If NZYTech fails to clone the DNA fragment in three attempts (for commercially available vectors shipped directly from the manufacturer) or two attempts (for all other vector preparations), NZYTech reserves the right to ship the gene cloned into our in-house vector or as a linear PCR fragment and refund to CUSTOMER the custom cloning fee.

All genes resulting from gene synthesis and/or cloning services are stored at NZYTech for a three-month period. After this period, nucleic acids provided to CUSTOMERS are destroyed. Custom proteins are not stored in-house after dispatch to clients.

## Peptide Synthesis: Representations and Indemnities

Unless otherwise stated, all peptide quantities/amounts mentioned on our website and all our documents including but not limited to quotation, projects, reports, invoices are gross weights. Gross weight includes not only the target peptides but also fragment peptides, salts and residual water. Net peptide weight indicates the actual weight of the peptide component of your sample, and is usually 60-70% of the total gross peptide weight. Custom peptides are not stored in-house after dispatch to clients.

## Disputes and applicable law

These terms and conditions are subject to Portuguese law and, in the event of any dispute, the parties shall recourse to the courts of the city ("comarca") of Lisbon.

Information made available on a permanent basis in Compliance with article 10 of the E-commerce law (Decree-Law n.º 7/2004, of 7 January, as amended) and seller of the goods and services.

**Name:** NZYTech, Lda.

**Address:** Estrada do Paço do Lumiar – Campus do Lumiar, Edifício E – 1º andar – 1649-038 Lisboa, PORTUGAL

**Email:** info@nzytech.com

**VAT number:** 508432901

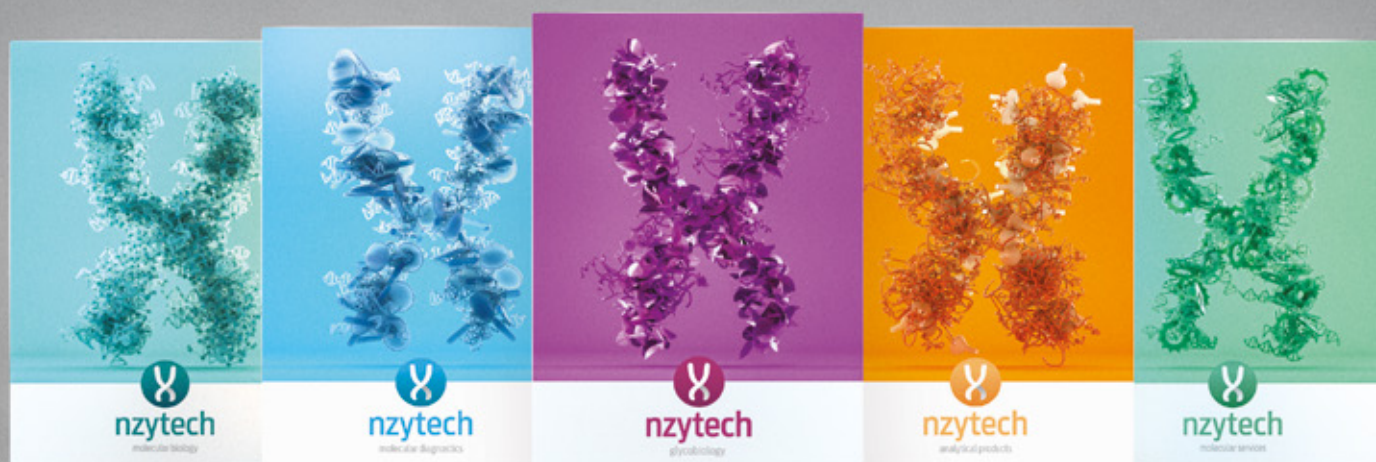
# NOTES



# NOTES

# NOTES

## Catalogues by NZYTech



**nzytech**  
genes & enzymes

Customer Service Team  
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[www.nzytech.com](http://www.nzytech.com)  
[info@nzytech.com](mailto:info@nzytech.com)